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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/524,809	02/15/2005	James S. Im	A35416-PCT-USA (070050.27)	1620
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EXAMINER TOLEDO, FERNANDO L.				
ART UNIT 2895		PAPER NUMBER		
NOTIFICATION DATE 05/07/2009		DELIVERY MODE ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

DLNYDOCKET@BAKERBOTTS.COM

Office Action Summary

Application No.

10/524,809

Applicant(s)

IM, JAMES S.

Examiner

Fernando L. Toledo

Art Unit

2895

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SE/US)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1 and 3 – 16 are rejected under 35 U.S.C. 102(e) as being anticipated by Voutsas (US Patent Application Publication US 2003/0000455 A1).

3. In re claim 1, Voutsas discloses (a) irradiating a first region of a surface of the semiconductor thin film with a pulse of a radiation beam, wherein the radiation beam is first patterned into at least one beamlet in a pattern of beamlets, wherein each beamlet is incident on a target area in the first region, wherein each beamlet has sufficient fluence to melt semiconductor material in the target area on which it is incident, and wherein the molten semiconductor material in the target area recrystallizes when it is no longer exposed to the incident beamlet; (§0005) and (b) continuously translating the semiconductor thin film relative to the radiation beam so that a second region of the surface of the semiconductor thin film is irradiated in the same manner as (a) (§0005) wherein the second region is geometrically separated from the first region (Figure 3).

4. In re claim 3, Voutsas discloses further comprising the step of using a mask to pattern the beamlets from the radiation beam pulse (§0008).

5. In re claim 4, Voutsas discloses wherein the mask comprises: a blocking portion that blocks through passage of radiation incident on it; a plurality of slits in a pattern, wherein the

slits allow through passage of radiation incident on them, and wherein the slits are disposed substantially parallel to each other in the pattern (§0008).

6. In re claim 5, Voustsas discloses wherein the mask comprises: a blocking portion that blocks through passage of radiation incident on it; a plurality of slits in a pattern, wherein the slits allow through passage of radiation incident on them, and wherein the slits are arranged in pairs along the sides of rectangles in the pattern (§0008).

7. In re claim 6, Voustsas discloses further the step of comprising supporting the semiconductor thin film on a movable stage, and wherein translating the semiconductor thin film relative to the radiation beam comprises moving the movable stage along a linear path to the next region (§0007).

8. In re claim 7, Voustsas discloses, wherein the semiconductor thin film comprises rows of regions, further comprising moving the movable stage along the linear path through a first row of regions on the surface of the semiconductor thin film (§0007 and Fig. 2).

9. In re claim 8, Voustsas discloses wherein the movable stage is moved continuously without pause through the row of regions (§0007).

10. In re claim 9, Voustsas discloses wherein the movable stage is paused at a region and is then stepped to an adjacent region (§0007).

11. In re claim 10, Voustsas discloses further comprising moving the movable stage along linear paths through successive rows of regions until the entire surface of the semiconductor thin film has been processed (figure 3).

12. In re claim 11, Voustsas discloses wherein at least one of the target areas in the first region is contiguous to a corresponding target area in the next region, so that after irradiation of

the first and next regions an extended strip or recrystallized semiconductor material is formed (Figure 3).

13. In re claim 12, Voustsas discloses (a) using a laser to generate a pulse of a radiation beam (¶0005); (b) irradiating a first region era surface of the semiconductor thin film with the pulse of the radiation beam, wherein the radiation beam is first patterned into at least one beamlet in a pattern of beamlets, wherein each beamlet is incident on a target area in the first region, wherein each beamlet has sufficient fluence to melt semiconductor material in the target area on which it is incident, and wherein the molten semiconductor material in the target area recrystallizes when it is no longer exposed to the incident beamlet (¶0005), and (c) after irradiating the first region of the surface of the semiconductor thin film with the pulse of the radiation beam, translating the semiconductor thin film relative to the radiation beam so that a second region of the surface of the semiconductor thin film is irradiated in the manner of (a) and (b) wherein the second region is geometrically separated from the first region (¶0005 and Figure 3).

14. In re claim 13, Voustsas discloses wherein the laser is triggered to generate the pulse of the radiation beam according to the position of the thin film semiconductor region relative to the radiation beam (¶0007).

15. In re claim 14, Voustsas discloses further comprising supporting the semiconductor thin film on a movable stage, and wherein translating the semiconductor thin film relative to the radiation beam comprises moving the movable stage, and wherein the laser is triggered to generate the pulse of the radiation beam according to the position of the movable stage (¶0007).

16. In re claim 15, Voustsas discloses wherein the position of the movable stage is sensed by position sensors (¶0007).

17. In re claim 16, Voustas discloses wherein the position of the movable stage is computed from an initial position of the stage (§0007).

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

19. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Voustas as applied to claim 1 above.

In re claim 19, Voustas does not disclose that the beamlets have a cross sectional dimension in the order of a micron. Voustas discloses that the beamlets may vary and as an example uses beamlets of 3 - 5 microns in diameter (§0005).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the beamlets with a cross sectional dimension in the order of a micron, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Note that the specification contains no disclosure of either the critical nature of the claimed cross sectional dimension parameters or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen cross sectional dimension parameters or upon another variable recited in a claim, the Applicant must show that the chosen cross sectional dimension parameters are critical. *In re Woodruff*, 919 F.2d 1575,

1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990). In addition, the selection of cross sectional dimension parameters, its obvious because it is a matter of determining optimum process conditions by routine experimentation with a limited number of species of result effective variables. These claims are prima facie obvious without showing that the claimed ranges achieve unexpected results relative to the prior art range. In re Woodruff, 16 USPQ2d 1935, 1937 (Fed. Cir. 1990). See also In re Huang, 40 USPQ2d 1685, 1688 (Fed. Cir. 1996)(claimed ranges or a result effective variable, which do not overlap the prior art ranges, are unpatentable unless they produce a new and unexpected result which is different in kind and not merely in degree from the results of the prior art). See also In re Boesch, 205 USPQ 215 (CCPA) (discovery of optimum value of result effective variable in known process is ordinarily within skill or art) and In re Aller, 105 USPQ 233 (CCPA 1995) (selection of optimum ranges within prior art general conditions is obvious).

Response to Arguments

20. Applicant's arguments filed 6 February 2009 have been fully considered but they are not persuasive for the following reasons. Applicant contests that Voustas discloses an overlapping beam irradiation that would be contrary to the new limitations of "wherein the first region is geometrically separated from the second region..." However, Voustas discloses that the state of the art prior to the invention claim in the Voustas reference, discloses that the first region was geometrically separated from the second region as evidenced in figure 3. Therefore, Voustas discloses the invention as claimed and hence, the 35 USC §102(c) rejection stands and it's considered proper.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fernando L. Toledo whose telephone number is 571-272-1867. The examiner can normally be reached on Mon-Fri 8am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Richards can be reached on 571-272-1736. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Fernando L. Toledo/
Primary Examiner, Art Unit 2895

flt
4 May 2009